

## HELICALLY COILED GARDEN HOSE HOLDER

### FIELD OF INVENTION

**[0001]** The present invention relates generally to helically coiled garden hoses and, more particularly, to a holder for helically coiled garden hoses.

### BACKGROUND ART

**[0002]** Helically coiled garden hoses typically have lengths between opposite ends thereof in the range of 25 to 60 feet. Helically coiled garden hoses having circular cross-sections typically have hose inner diameters of about 3/8 an inch, while helically coiled garden hoses having elliptical cross-sections frequently have major inner axes of about one-half an inch. Helically coiled garden hoses having both circular and elliptical cross-sections typically have multiple abutting turns with inner and outer diameters of approximately 4 1/2 and 5 1/2 inches, respectively. Helically coil garden hoses in a quiescent condition thus resemble a cylindrical tube. The helix of hoses from one source has inner and outer diameters of approximately 4 1/2 and 5 1/2 inches, respectively, and lengths between opposite ends of the helical tube in the range of about 10 inches to about 2 feet for hoses respectively having lengths in the range of 25 to 60 feet between opposite ends thereof.

**[0003]** To our knowledge, no holder has been specifically designed for

helically coiled garden hoses. As result, the helically coiled garden hoses frequently lie on the ground or floor. This is particularly true when the helically coiled garden hose is (1) not being used (i.e., in a quiescent condition) or (2) being used such that the hose is in only a partially extended condition and a partially retracted condition, as occurs when a first end of the hose connected to a nozzle or sprayer is in close proximity to the opposite, second end of the hose connected to a spigot. A helically coiled garden hose that is not being used and lays on the ground or floor is somewhat unsightly, subject to wear due to friction, and can be a nuisance to people moving about in the region where the hose is laying. Some people using helically coiled garden hoses in only a partially extended condition have found such hoses difficult to handle because of the weight of the water in the hose.

**[0004]** It is, accordingly, an object of the present invention to provide a holder specifically designed for helically coiled garden hoses, and to the combination of such a holder and a helically coiled garden hose.

**[0005]** Another object of the present invention is to provide a holder for helically coiled garden hoses, wherein the holder reduces contact between the hose and the ground or floor where the hose is located.

**[0006]** An additional object of the invention is to provide a holder for helically coiled garden hoses, wherein the holder is arranged to enable the

helically coiled garden hose to be easily paid from the holder.

#### **SUMMARY OF THE INVENTION**

**[0007]** In accordance with one aspect of the present invention, a holder for carrying a coiled helical garden hose is provided. The hose has plural helical turns, a longitudinal axis within the turns, and a first predetermined length along the longitudinal axis thereof. The holder comprises an elongated leg arrangement including a portion with a longitudinal axis adapted to extend vertically while holding the hose. The portion of the leg arrangement adapted to extend vertically has a second predetermined length that exceeds the first predetermined length. The vertically extending portion of the leg arrangement is shaped and dimensioned so all the helical turns of the coiled helical hose can fit around and be held in place by the vertically extending portion of the leg arrangement. The longitudinal axis of the hose is adapted to extend vertically and in approximate alignment with the longitudinal axis of the portion of the leg adapted to extend vertically.

**[0008]** Another aspect of the present invention relates to such a holder in combination with such a coiled helical garden hose.

**[0009]** Preferably, the portion of the leg arrangement adapted to extend vertically includes plural laterally spaced rod-like structures adapted to extend vertically. The plural rod-like structures are arranged and dimensioned for

enabling the coiled helical hose turns to surround the plural rod-like structures.

**[0010]** The leg arrangement preferably includes a second portion adapted to extend vertically and horizontally from the portion of the leg arrangement adapted to extend vertically. The second portion of the leg arrangement extending at an angle from the portion of the leg arrangement adapted to extend vertically enables the turns of the coiled hose to be placed on and removed from the vertically extending portion of the leg arrangement. The second portion includes plural rod-like structures that are integral with the plural rod-like structures of the vertical portion of the leg arrangement.

**[0011]** Preferably, ends of the plural rod-like structures of the second portion are connected together.

**[0012]** The angle between the second portion of the leg arrangement and the portion of the leg arrangement adapted to extend vertically is preferably about 30 degrees to facilitate insertion and removal of the hose from the holder.

**[0013]** Preferably, the holder includes a spike secured to a lower portion of the leg arrangement. The spike is adapted to be driven into the ground or secured to a wall and preferably includes a tongue that extends from a base having a W-shaped cross section.

**[0014]** The spike is preferably secured to the lower portion of the leg arrangement in such a way as to enable the leg portion that is adapted to extend vertically to be laterally spaced from the wall by a distance sufficient to enable the coiled hose to fit between the wall and the holder. In addition, the leg portion that is adapted to extend vertically is preferably secured to the spike in such a way as to facilitate insertion on and removal from the spike of the vertically extending leg portion, while maintaining the structural integrity of a connection between the spike and lower portion of the leg arrangement. Such a result is achieved in an inexpensive manner by providing the spike with a web arrangement that is spaced from a shoulder of the spike to provide an opening arrangement. The lower portion of the leg arrangement fits into the opening arrangement in such a way that an arm of the leg arrangement bears against an upper edge of the shoulder.

**[0015]** The above and still further objects, features and advantages of the present invention will become apparent upon consideration of the following detailed description of a specific embodiment thereof, especially when taken in conjunction with the accompanying drawings.

#### BRIEF DESCRIPTION OF THE DRAWINGS

**[0016]** Figure 1 is a perspective view of a helically coiled garden hose carried by a holder for such a hose, wherein the holder includes a spike mounted on a wall;

**[0017]** Figure 2 is a perspective view of a helically coiled garden hose carried by a holder for such a hose, wherein the holder includes a spike driven into the ground;

**[0018]** Figure 3 is a side view of a leg arrangement of the hose holders illustrated in Figures 1 and 2;

**[0019]** Figure 4 is a front view of the leg arrangement illustrated in Figure 3;

**[0020]** Figure 5 is a perspective view of a spike included in the hose holders illustrated in Figures 1 and 2;

**[0021]** Figure 6 is a front view of the spike illustrated in Figure 5;

**[0022]** Figure 7 is a sectional view taken through the lines 7-7, Figure 6;

**[0023]** Figure 8 is a sectional view taken through the lines 8-8, Figure 6;

**[0024]** Figure 9 is an enlarged view of a portion of the structure illustrated in Figure 8, further in combination with a rod of the leg arrangement illustrated in Figures 1-4;

**[0025]** Figure 10 is an enlarged back view of segments of the spike and bottom portions of the leg arrangement illustrated in Figures 1 and 2; and

**[0026]** Figure 11 is an enlarged front view of segments of the spike and bottom portions of the leg arrangement illustrated in Figures 1 and 2.

#### DETAILED DESCRIPTION OF THE DRAWING

**[0027]** Reference is now made to Figure 1 of the drawing wherein helically coiled garden hose 10, having helical turns at a substantially constant distance from a central, longitudinal axis of the helix, is illustrated as being carried by holder 12 so that the longitudinal axis of the hose is vertically disposed. Connectors 14 and 15, respectively at the bottom and top ends of hose 10, are respectively connected to water spigot 16 on wall 18 and nozzle 19.

**[0028]** Hose holder 12 includes leg arrangement 20 and sheet metal spike 22, connected together so that the spike holds the leg arrangement firmly in place. Leg arrangement 20 and spike 22 are connected to each other in such a manner that the leg arrangement can be selectively connected to and removed from the spike. Leg arrangement 20 and spike 22 are also connected to each other in such a manner as to provide adequate support for hose holder 12 while hose 10 is being manipulated in use, despite the substantial torque exerted by the hose on leg arrangement 20 and spike 22 during manipulation. The substantial torque occurs because of the weight of the hose and the water

therein, as well as because of the bending torque that the hose and water therein exert on leg arrangement 20 as the hose is being pulled from holder 12 during use.

**[0029]** Leg arrangement 20 and helically coiled garden hose 10 are dimensioned so that the hose can fit over and surround the leg arrangement. The dimensions of leg arrangement 20 and hose 10 are also such that the hose exterior is spaced from wall 18 by a distance to preclude rubbing between the hose and wall while the hose is being manipulated in use (i.e., while water is flowing from spigot 16 through hose 10 and nozzle 19 and the hose is being pulled (expanded) and released (contracted)) and while the hose is being loaded onto and removed from the leg arrangement. Leg arrangement 20 is also shaped in such a manner as to preclude rubbing between the hose and wall 18 while the hose is being manipulated in use and while the hose is being loaded onto and removed from the leg arrangement.

**[0030]** Spike 22, as illustrated in Figure 2, is shaped so that the spike can easily be driven into ground surface 24. If ground surface 24 is soft, spike 22 can be driven into the ground surface while leg arrangement 20 is connected to the spike. If, however, ground surface 24 is hard, it is generally advisable for leg arrangement 20 to be separate from spike 22 while the spike is being driven into the ground surface. After the spike has been driven into the ground surface the leg arrangement is connected to the spike.



**[0031]** As illustrated in Figures 3 and 4, leg arrangement 20 is formed of an elongated steel rod 26 having a circular cross-section. Rod 26 is resistant to rusting by being made of stainless steel or regular steel having an exterior covered with a rust inhibiting coating (not shown) preferably made of an acrylic material. Rod 26 is bent to form two rod-like, laterally spaced structures that are equi-distant from each other in parallel planes, except where the two rod-like structures are connected together. The two rod-like structures are spaced from each other by a distance sufficient to hold hose 10 in place, while being close enough to each other to enable the hose to fit over the two rod-like structures without substantial contact being made between the rod-like structures and the hose. In one arrangement, wherein the inner diameter of the helix of the garden hose is approximately 4 1/2 inches, the exterior edges of the two rod-like structures are spaced by about 2 1/8 inches.

**[0032]** Leg arrangement 20 includes a first, vertically extending elongated portion 28 and a second elongated upper portion 30 that extends vertically and horizontally; portion 30 is preferably displaced from the vertical by an angle of approximately 30 degrees. The first, vertically extending elongated portion 28 is longer between its top and bottom ends than the fully contracted length of hose 10 in the direction of its longitudinal axis, i.e., the length of hose 10 between connectors 14 and 15. Thereby, the vertically extending portion 28 of leg arrangement 20 is shaped and dimensioned so all the helical turns of coiled

helical hose 10 can fit around and be held in place by leg portion 28. Vertically extending portion 28 has a vertical longitudinal axis, equi-distant from the two rod-like structures formed by rod 26; the longitudinal axis of the two rod-like structures is approximately aligned with the longitudinal axis of hose 10 when the hose is on vertically extending portion 28. The bottom end of vertically extending elongated portion 28 is bent to form horizontally extending arm 32, in turn bent to form vertically extending foot 34. Arm 32 has a length sufficient to enable hose 10 to fit over leg portion 28 without contacting wall 18. For a helical garden hose having an outer helix diameter of about 5 1/2 inches, arm 32 has a length of approximately 2 1/2 inches to provide sufficient lateral space between leg portion 28 and wall 18 to enable coiled hose 10 to fit between the wall and holder 12.

**[0033]** Portion 28, arm 32 and foot 34, as well as most of portion 30, include the two rod-like structures that are equally spaced from each other in parallel planes. The two rod-like structures at the upper end of portion 30 remote from portion 28 are connected together by rounded portion 35 of rod 26. Rounded portion 35 has a semi-circular shape so that the ends of the rounded portion are tangent to the ends of the elongated segments of portion 30.

**[0034]** Each of the rod-like structures that form the end of foot 34 includes a threaded bore 37 (not shown) into which sheet metal screws 36 are screwed. Screws 36 help to secure leg arrangement 20 to spike 22 since the screws fit into corresponding holes 38 (Figures 5,6 and 11) in ribs 39 of shoulders 40 of the

spike. Shoulders 40 extend laterally from base 42 of spike 22.

**[0035]** Spike 22 is formed of a single piece of sheet metal (14 gauge in a preferred embodiment), covered with a rust inhibiting coating, made, for example, of an acrylic material. Spike 22 includes tongue 44 that extends longitudinally from base 42 and includes pointed end 46 remote from base 42. Tongue 44 has a central rib 48 and a V-shaped cross-section (Figure 7), a shape to facilitate driving of spike 22 into ground surface 24. Rib 48 extends through base 42 and is directed oppositely from ribs 39 so that base 42 and shoulders 40 have a W-shaped cross-section (Figure 8) to provide structural strength and rigidity to spike 22 along the longitudinal axis of the spike (i.e., in the direction that rib 48 extends) and the transverse axis of the spike. The W-shaped cross section also provides a large contact area between spike 22 and the earth when the spike is driven sufficiently far into the ground so a portion of the W-shaped cross section is buried. Such a position of stake 22 thus enables holder 12 to be mounted in a stable manner. Holes 50 and 52 are respectively bored into base 42 and tongue 44 along rib 48 to receive screws 54 (Figure 1) that help to hold rib 48 in abutting relationship against wall 18. Flanges 56, having a back face coplanar with rib 48, extend laterally from the ends of shoulders 40 remote from base 42 and include holes 58 into which screws 60 fit to help to hold the flanges in abutting relationship against wall 18.

**[0036]** Spike 22 also includes webs 62 that extend between shoulders 40

and base 42 and are aligned with, but spaced from, ribs 39 to form a pair of openings 64 that extend in the same direction as the longitudinal direction of tongue 44; openings 64 are longitudinally aligned with holes 38. Webs 62 have curved surfaces forming apices 66 that are directed oppositely from ribs 39 so that the spacing between each of ribs 39 and each of apices 66, i.e., the transverse dimension of each of openings 64, is equal to the diameter of rod 26, to provide a firm, frictional, engaging fit between the surfaces forming opening 64 and the exterior surfaces of the rod. The positions of (1) the holes in the rod-like structures forming foot 34 into which screws 36 are screwed and (2) holes 38 are such that the bottom edges of the rod like structures forming arm 32 bear against the upper edges of shoulders 40. Because arm 32 bears against the upper edges of shoulders 40, most of the substantial torque that hose 10 exerts on leg arrangement 20 while the hose is being loaded onto and removed from the leg arrangement and as the hose is being manipulated on the leg arrangement in use is transmitted to shoulders 40, rather than to webs 62. Consequently, webs 62 can be relatively short (e.g., 1/2 inch) in the direction of the longitudinal axis of tongue 44.

**[0037]** While there has been described and illustrated a specific embodiment of the invention, it will be clear that variations in the details of the embodiment specifically illustrated and described may be made without departing from the true spirit and scope of the invention as defined in the appended claims.